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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/552,857	04/20/2000	Jeffrey Allen Whaley	AUS000104USI	4257

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EXAMINER	
NGUYEN, KIMBINH T	

ART UNIT	PAPER NUMBER
2671	

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/552,857	WHALEY, JEFFREY ALLEN	
	Examiner	Art Unit	
	Kimbinh T. Nguyen	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18,22 and 23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2,8,9 and 18* is/are allowed.

6)☒ Claim(s) *1,3-7,10-17,22,23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to amendment filed 12/17/04.

2. Claims 1-18, 22 and 23 are pending in the application.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 7 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelley et al., U.S. Patent No. 5,517,603.

Claim 1, Kelley et al discloses an apparatus for optimizing processing of graphics data (abstract), the apparatus comprising: a plurality of logic units (fig 7), wherein the plurality of logic units are used to perform a graphics operation fig 7) in which a set of constants is required for the graphics operation (column 13 lines 1-15 and column 15 lines 38-52, Z-value could be a constant value; a first set of connections connecting the plurality of logic units to each other (5g 7), wherein the first set of connections are used to configure the plurality of logic units (column 13 lines 1-15 and column 15 lines 38-52., fig. 7, stage 2 is one logic circuit and stage 3 is another, logic circuit) to calculate the set of

constants (column 15 lines 38-52, the pixel interpolation token is received from one connection and the Z-value is calculated for stage 2 and the alpha value is calculated for stage 3),. and a second set of connections connecting the plurality of logic units fig 7), wherein the second set of connections configure the plurality of logic units to perform the graphics operation (column 13 lines 1-15 and column 15 lines 38-52) in which the graphics operation uses the constants calculated through the first set of connections (fig. 7 and column 13 lines 1-15 and column 15 lines 3152 and column 25 lines 60-65, control tokens from a connection configure the chip (logic unit) to perform its particular function, like using the Z-value (constant) to generate another result.

Claim 7, Kelley et al. discloses the apparatus is a graphics adapter (col. 2, lines 5- 15).

Claim 10, Kelley et al discloses a graphics pipeline (fig 7) comprising: an input (fig 7, #701, objects are input for processing), wherein the input receives graphics data (fig. 7, #701), and output (fig 7, #709, this output is the frame buffer which is then sent to the display fig 4 # 410 and #409), wherein the output transmits processed graphics data (fig 7, #709, the processed data does to the frame buffers); and a plurality of stages (fig 7) wherein a first stage within the plurality of stages is connected to the input (the input, objects, is connected to stage 1) and a last stage within the plurality of stages is connected to the output (stage 3 is connected to the system buffer which is the output connected to the display); the selected image is configured to calculate constants for use in performing a graphics operation (col. 15, lines 38-52, the z value is calculated for

stage 2); and in the selected stage is configured to perform the graphics operation using the constants calculated (the z-value is used to determine how close an object is). However, Kelley et al does not disclose using modes of operation. A mode is just a particular way of functioning. Therefore it is inherent that there are different modes of operation here. Anytime two different functions are happening that is two different modes.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al. in view of Rohner, U.S. Patent No. 6,064,392.

Claims 3 and 13, Kelley et al does not disclose wherein the graphics operation is a generation of a fog factor. This is disclosed in Rohner in the abstract. It would have been obvious to generate a fog factor as the graphics operation because it would provide realistic non-homogeneous fog effect in computer graphics images with a minimum amount of hardware (col. 2, lines 7-9).

7. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al in view of Harris et al., U.S. Patent No. 6,304,265.

Claims 4 and 14, Kelley et al does not disclose wherein the graphics operation is a viewport transformation. This is disclosed in Harris et al in column 7 lines 48-56. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use viewport transformation with the system of Kelley et al because this would allow the graphics data to be mapped and viewed on a computer screen.

8. Claims 5-6, 9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al in view of Gholizadeh et al., U.S. Patent No. 5,369,737.

Claims 5 and 11, Kelley et al does not disclose wherein the constants are stored in a memory. This is disclosed in Gholizadeh et al in fig 3, #70. It would have been obvious to one of ordinary skill in the ad at the time the invention was made to store the constants on Kelley et al in memory because this would allow the constants to be used again if they were needed.

Claims 6, 9 and 12, Kelley et al does not disclose wherein the constants are stored in a set of registers. This is disclosed in Gholizadeh et al in fig 3, #70. It would have been obvious to one of ordinary skill in the art at the time the invention was made to store the constants on Kelley et al in registers because this would allow the constants to be used again if they were needed.

9. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al.

Claim 15, Kelley et al does not disclose wherein the output is connected to a raster engine. It would have been obvious to one of ordinary skill in the art at

the time the invention was made to conned the output to a raster engine because the image has to be rasterized before it can be displayed and in this case you want to display the modified (output) image.

Claim 16, Kelley et al does not disclose wherein the input is connected to a raster engine. It would have been obvious to one of ordinary skill in the art at the time the invention was made to conned the input to a raster engine because the image has to be rasterized before it can be displayed and in this case you want to display the original (input) image.

Claim 17, Kelley et al does not disclose wherein the input and the output are located in a raster interface unit. It would have been obvious to of ordinary skill in the art at the time the invention was made to use a raster interface unit because this would save on having to have separate raster engines which would save on the cost of the extra chip.

10. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cobb et al., U.S. Patent No. 6,603,474 in view of Kelley et al.

Claim 22, Cobb et al discloses an input configured to receive graphics data (column 4 lines 32-38); a frame buffer, wherein processed graphics data is stored for display (column 1 lines 30-34); a raster engine connected to the input and to the frame buffer, wherein the raster engine rasterizes the processed graphics data for display (column 4 lines 32-38); a geometry engine connected to the raster engine (column 4 lines 32-38), wherein the geometry engine receives graphics data from the raster engine (column 4 lines 32-38), processes the

graphics data to the raster engine to form the processed graphics data (column 4 lines 32-38), and returns the processed graphics data to the raster engine and wherein the geometry engine includes a set of processing elements in which at least one processing element within the set of processing elements includes a set of logic units (it is well known for geometry engines to include processing elements because you are processing geometry data). However, Cobb et al does not disclose in which the set of logic units is used to perform an operation on the graphics data using an equation and wherein a portion of the set of logic units is used to determine at least one constant for the equation used in the operation. This disclosed in Kelley et al in column 13 lines 1-15 and column 15 lines 38-52. It would have been obvious to one of ordinary skill in the art at the time the invention was made to generate constants because this would increase processing speed by not having to regenerate them every time they are needed.

Claim 23, Cobb in view of Kelley does not specifically disclose wherein the at least one processing element includes a storage to store the constant determined by the portion of the set of logic units such that recalculation of the at least one constant for additional operations on other graphics data is unnecessary until the al least one constant changes. It would have been obvious to one of ordinal skill in the art at the time the invention was made to store the constants in a storage unit such that recalculation of the set of constants for subsequent graphics operations is unnecessary until the set of constants change with the system of Kelley et al because this would allow the constants to be used as needed without having to recalculate the same constant over again.

Allowable Subject Matter

11. Claims 2, 8, 9 and 18 are allowed.

Response to Arguments

12. Applicant's arguments filed 12/17/04 have been fully considered but they are not persuasive, because the combinations of the references teach the limitations the claims, in the Office Action, a set of constants could be a z value, because z values are calculated for multiple operations in graphics image processing such as culling, clipping rasterizing and fog operations and which are connected to a set of logic units for processing geometry data. In the present invention, the set of constants are calculated to determine a fog factor (based on the z-start and z-end values) for fog operation.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimbinh T. Nguyen whose telephone number is (571) 272-7644. The examiner can normally be reached on Monday to Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached at (571) 272-7782. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 11, 2005

/Kimbinh T. Nguyen/

KIMBINH T. NGUYEN
PRIMARY EXAMINER